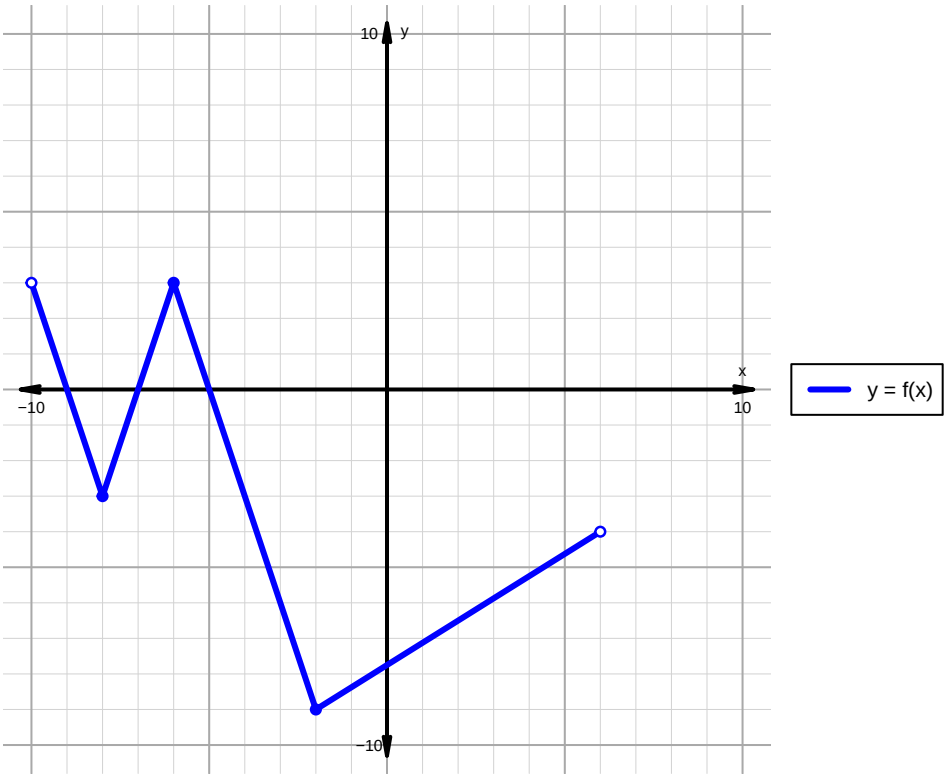
Name: Date:

Intervals, Transformations, and Slope Solution (version 12)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7, -5)$
Negative	$(-10, -9) \cup (-9, -7) \cup (-5, 6)$
Increasing	$(-8, -6) \cup (-2, 6)$
Decreasing	$(-10, -8) \cup (-6, -2)$
Domain	$(-10, 6)$
Range	$(-9, 3)$

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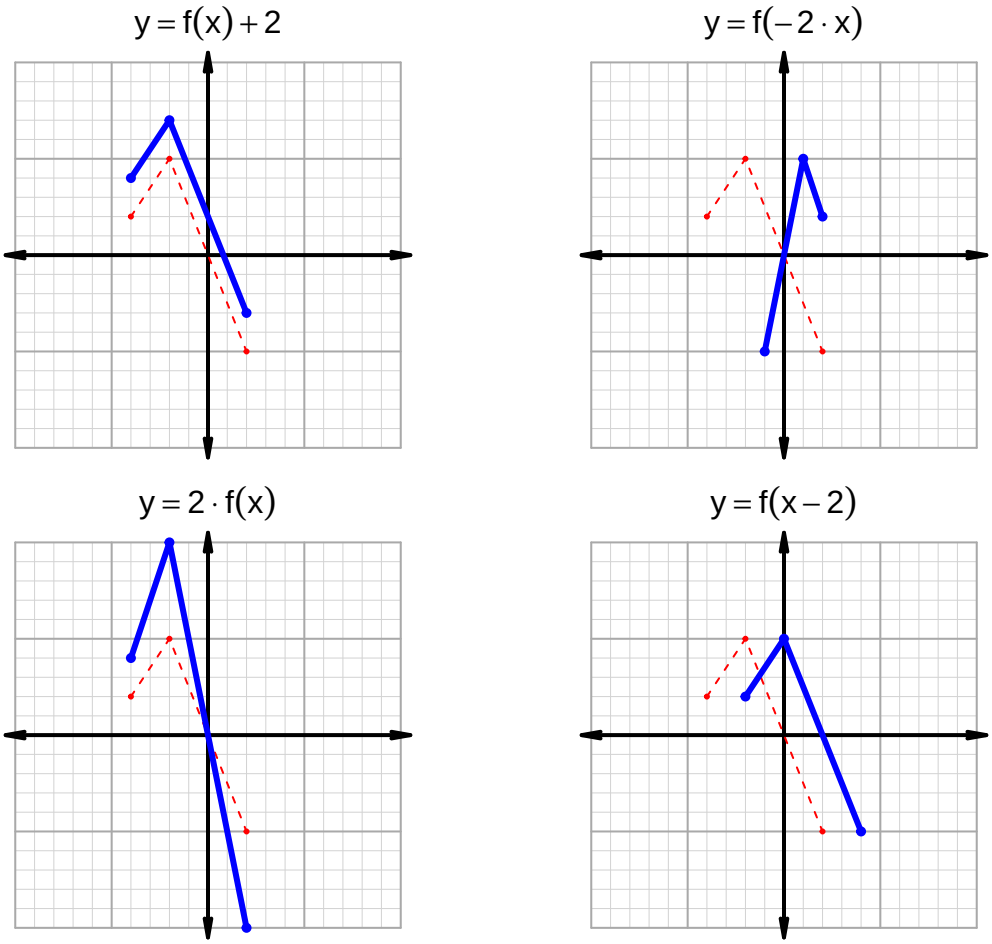
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 43$ and $x_2 = 85$. Express your answer as a reduced fraction.

x	$g(x)$
43	63
63	85
75	43
85	75

$\frac{f(85)-f(43)}{85-43} = \frac{75-63}{85-43} = \frac{12}{42}$

The greatest common factor of 12 and 42 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{2}{7}$$